

# Sharath Rao K

Boston University  
Department of Electrical and Computer Engineering  
8, Saint Mary's Street, Boston 02115, MA

raosharathonline@yahoo.com  
<http://www.geocities.com/raosharathonline>  
Phone (c): (617) 869 9923

**Objective** A challenging summer internship position with responsibilities utilizing my background areas of signal processing and computer science

**Research Interests** Computer Vision, Image and Video Processing, Speech and audio processing

**Experience** **Graduate Teaching Fellow** (Sep 2004 - Present)  
Department of Electrical and Computer Engineering, Boston University, MA

- Assist the senior undergraduate teams in the senior project activities

**Research Assistant** (July 2003 - June 2004)  
Speech and Audio Group, Indian Institute of Science, Bangalore

- Devised a speech enhancement system based on constrained iterative wiener filtering
- Developed algorithms for adaptive noise suppression for non-stationary disturbances

## Education

**Boston University, Boston, MA**  
Master of Science, Electrical and Computer Engineering,  
Current GPA : 3.85. Expected Graduation: May 2006

**National Institute of Technology Karnataka (NITK) , Deemed University, India**  
Bachelor of Engineering, Electrical and Electronics Engineering, May 2003  
Senior Project: PC Based power quality analyzer Overall GPA: 3.80 / 4.00

## Research Publications

- "Matrix quantization based time varying filter speech enhancement", Accepted at the ICASSP 2005, Philadelphia, PA
- "Improved Iterative Wiener Filter for non-stationary noise Speech Enhancement", Proceedings of the ICSLP 2004, South Korea, October 2004
- "VQ based Techniques in Speech Enhancement", Proc. of IEEE Annual Symposium on Mobile Computing and Applications, Nov 2003, Bangalore, India

## Relevant Coursework

- **Graduate Courses:**  
Digital Image Processing and Communication Artificial Intelligence  
Advanced Digital Signal Processing Stochastic Processes, detection and estimation
- **Undergraduate Level Courses**  
Digital Signal Processing Network Analysis  
Microprocessors Fuzzy Logic and applications  
Digital System Design Digital Computer Architecture  
Linear and Digital Control Systems Optimization Techniques

## Computer Skills

High Level Languages : C, C++, Visual Basic  
Assembly Languages : Intel 8085, TI TMS320F243  
Engineering Software : MATLAB, PSPICE  
Platforms : Linux, Windows, DOS

## Projects

- Content Based Image retrieval (Nov-Dec 2004)  
An Eigenspace (PCA) based method for detecting cars in images was developed
- Automatic text location in images (Nov-Dec 2004)  
An algorithm for locating scene text in images was developed using edge density features.
- Comparative study of speech enhancement algorithms ( Dec 2002-Jan 2003 )  
Spectral subtraction, time-frequency and wiener filtering methods were implemented in MATLAB and performance analysis for different noise levels was conducted.
- PC based power quality analyzer ( Jan 2003-May 2003 )  
Part of 7 member team that developed an end-to-end solution for power line data analysis to compute measures like harmonic distortion. Project involved design of data acquisition circuitry, DSP and MATLAB programming. I was in charge of MATLAB programming.
- High-speed multicast ATM switch simulation (June 2001-July 2001)  
Implemented the working of a multicast switch architecture in C++. Studied the effect of packet loss ratio, order of the delay on the computational complexity.

## Honors

- Secured a place among Top 4% of the 100,000 aspirants at IIT-JEE 1999.
- Letter of Appreciation from the Dean for excellence in Extra-Curricular Activities.
- Merit Scholarship by the Government of India for securing a position among top 0.5% in India in Social Sciences
- Best Paper award at IEEE Intellect, National level paper presentation competition held at Manipal Institute of Technology, Manipal, India (Apr 4, 2003).
- Best Presentation award at CSI Star Dot Fest, National level paper presentation Competition hosted by the Computer Society of India. (April 6, 2003)

## Interests

- Editor of the official Annual College Magazine.
- Head of the events organizing committee at Inter College Cultural festival
- Public Speaking, Writing, Photography, Non-fiction
- Fluent in English, Hindi, Kannada, Konkani